WHAT IS CLAIMED IS:

1. A process of positioning megacells that are included in an initial integrated circuit layout that violates design rules, the circuit layout having sides defining sides of a chip, the process comprising steps of:

inflating a size of at least some of the megacells;

placing the megacells in a footprint of the circuit to reduce placement complexity; and

permuting megacell placements to reduce placement complexity.

2. The process of claim 1, wherein the step of inflating a size of megacells comprises, for each megacell of a first type:

identifying a distance between an edge on the megacell and each side of the chip,

identifying a distance between a center of the megacell and a center of another megacell of the first type, and

applying an inflation factor to the sides of the megacell.

3. The process of claim 2, wherein the inflation factor is calculated by:

identifying a number of pins in each half of the megacell in each of two orthogonal directions, and

for each direction, at least in part basing the inflation factor for sides of the megacell in the respective direction on the number of pins in both halves of the megacell.

4. The process of claim 2, wherein the megacell has dimensions of m × n, and the inflation factor in the m dimension is calculated based on $I_{dyn} \bullet (np_{left} + np_{right})$ and the inflation factor in the n dimension is calculated based on $I_{dyn} \bullet (np_{upper} + np_{lower})$, where I_{dyn} is an inflation coefficient, np_{left} and np_{right} are a number of pins in respective halves of the megacell divided along the m dimension, and np_{upper} and np_{lower} are a number of pins in respective halves of the megacell divided along the n dimension.

5. The process of claim 1, wherein the placement of the megacells comprises:

placing all fixed megacells and blockages in the footprint,

generating a list of free rectangles in the footprint that do not contain megacells and blockages,

for each not-fixed megacell starting with a not-fixed megacell selected on the basis of size, placing the megacell in a free rectangle that is large enough to receive the megacell, and

applying a transformation movement to the megacell if the movement reduces placement complexity.

6. The process of claim 5, wherein the transformation movement is selected from the group consisting of shifting, rotating and flipping.

7. The process of claim 5, wherein the step of placing not-fixed megacells starts with the largest not-fixed megacell.

8. The process of claim 1, wherein the permutation of megacell placements comprises:

swapping positions of megacells of each pair of not-fixed megacells if the swapping reduces placement complexity, and

applying a transformation movement to each megacell if the movement reduces placement complexity.

9. The process of claim 8, wherein the transformation movement is selected from the group consisting of shifting, rotating and flipping.

10. The process of claim 8, wherein the swapping and application of transformation movement is iteratively performed.

11. A computer usable medium having a computer readable program embodied therein for addressing data to position megacells that are included in an initial integrated circuit layout that

violates design rules, the circuit layout having sides defining sides of a chip, the computer readable program comprising:

computer readable code for causing the computer to inflate a size of at least some of the megacells;

computer readable code for causing the computer to place the megacells in a footprint of the circuit to reduce placement complexity; and

computer readable code for causing the computer to permute megacell placements to reduce placement complexity.

12. The computer usable medium of claim 11, wherein the computer readable code that causes the computer to inflate sizes of megacells comprises:

computer readable code for causing the computer to identify a distance between an edge on each megacell of a first type and each side of the chip,

computer readable code for causing the computer to identify a distance between a center of the megacell and a center of another megacell of the first type, and

computer readable code for causing the computer to apply an inflation factor to the sides of the megacell.

13. The computer usable medium of claim 12, wherein the computer readable program further includes:

computer readable code for causing the computer to identify a number of pins in each half of the megacell in each of two orthogonal directions, and

computer readable code for causing the computer to calculate the inflation factor for a side of the megacell along one of the directions based at least in part on the number of pins in both respective halves of the megacell.

14. The computer usable medium of claim 12, wherein the megacell has dimensions of m × n, and the computer readable code applying an inflation factor calculates the inflation factor for the megacell in the m dimension based on $I_{dyn} \bullet (np_{left} + np_{right})$ and calculates the inflation factor in the n dimension based on $I_{dyn} \bullet (np_{upper} + np_{lower})$, where I_{dyn} is an inflation coefficient, np_{left} and np_{right} are a number of pins in respective halves of the megacell divided along the m dimension, and np_{upper} and np_{lower} are a number of pins in respective halves of the megacell divided along the n dimension.

15. The computer usable medium of claim 11, wherein the computer readable code for causing the computer to place the megacells comprises:

computer readable code for causing the computer to place all fixed megacells and blockages in the footprint,

computer readable code for causing the computer to generate a list of free rectangles in the footprint that do not contain megacells and blockages,

computer readable code for causing the computer to place each not-fixed megacell in a free rectangle that is large enough to receive the megacell, and

computer readable code for causing the computer to apply a transformation movement to the megacell if the movement reduces placement complexity.

16. The computer usable medium of claim 15, wherein the transformation movement is selected from the group consisting of shifting, rotating and flipping.

17. The computer usable medium of claim 15, wherein the computer readable code for placing not-fixed megacells starts with the largest not-fixed megacell.

18. The computer usable medium of claim 11, wherein the computer readable code that causes the computer to permute megacell placements comprises:

computer readable program code for causing the computer to swap positions of megacells of each pair of not-fixed megacells if the swapping reduces placement complexity, and

computer readable program code for causing the computer to apply a transformation movement to each megacell if the movement reduces placement complexity.

19. The computer usable medium of claim 18, wherein the transformation movement is selected from the group consisting of shifting, rotating and flipping.

20. The computer usable medium of claim 18, wherein the swapping and application of transformation movement is iteratively performed.